

Title: Tangents, Secants, and Chords...OH MY!

Brief Overview:

Using Geometer's Sketchpad, students will discover and prove proportions involving intersecting chords, secant segments and tangent segments. These lessons are primarily self-guided by the student.

NCTM Content Standard:

- Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships
- Use visualization, spatial reasoning, and geometric modeling to solve problems
- Develop and evaluate mathematical arguments and proofs.
- Select and use various types of reasoning and methods of proof.

Grade/Level:

High School Geometry

Duration/Length:

One period (45 minutes)

Student Outcomes:

Students will:

- Review properties of similar triangles.
- Review properties relating to measures of inscribed, central, external, and internal angles of circles.
- Discover the proportions relating segments on chords, secants, and tangents of a circle.
- Generate theorems based on observations.
- Prove theorems deductively.

Materials and Resources:

- Geometer's Sketchpad
- Worksheet #1
- Worksheet #2
- Worksheet #3